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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,512	04/05/2001	Michio Horiuchi	89-01	7877

7590 03/28/2002
Paul & Paul
2900 Two Thousand Market Street
Philadelphia, PA 19103

EXAMINER

ALCALA, JOSE H

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 03/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,512

Applicant(s)

HORIUCHI ET AL.

Examiner

Jose H Alcalá

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 2-11, 15-18 and 20-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 12, 13, 14, 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group 1, Species 1 in Paper No. 6 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Applicant's arguments that there has not been shown that the examination of all the claims would be an undue burden to the examiner, has been acknowledged but is found non persuasive, since the burden has been shown by the different class/subclass between the two groups and by the amount of different species in Group 1.

2. Claims 2-11,15-18,20-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Invention and Species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in–

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Art Unit: 2827

4. Claims 1 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Imasu et al. (US Patent No. 6,208,525).

Regarding Claim 1, Imasu teaches a wiring substrate (Reference number 1) equipped with a rerouted wiring (Reference Number 4A) having one end connected to an electronic-part mounting pad for electrically connecting an electronic part (Reference Number 10) and another end connected to an external-connection terminal (Reference Number 20), in which a base body of said wiring substrate comprises a low-elasticity underlayer (Reference Number 3), made of a material having a lower modulus of elasticity than that of the base material, between the base material of the wiring substrate and each of the electronic-part mounting pad and the rerouted wiring.

Regarding Claim 12, Imasu teaches a semiconductor device (Reference Number 10) comprising a wiring substrate (Reference number 1) equipped with a rerouted wiring (Reference Number 4A) having one end connected to an electronic-part mounting pad for electrically connecting an electronic part (Reference Number 10) and another end connected to an external-connection terminal (Reference Number 20), in which a base body of said wiring substrate comprises a low-elasticity underlayer (Reference Number 3), made of a material having a lower modulus of elasticity than that of the base material, between the base material of the wiring substrate and each of the electronic-part mounting pad and the rerouted wiring.

Claim Rejections - 35 USC § 103

Art Unit: 2827

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 13, 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imasu et al. (US Patent No. 6,208,525).

Regarding Claim 13, Imasu fails to explicitly teach that the low-elasticity underlayer is made of a material having a Young's modulus of less than 1 GPa measured at a room temperature (20 to 30 °C) and a Young's modulus of 10 MPa or less measured at 150. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the top layer of a low elasticity material in order to protect the rest of the layers of the device. In addition it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. See *In re Leshin*, 125 USPQ 416. In regard to the exact values of the Young's Modulus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to make the low-elasticity underlayer of a material having a Young's modulus of less than 1 GPa measured at a room temperature (20 to 30 °C) and a Young's modulus of 10 MPa or less measured at 150, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding Claim 14, Imasu teaches that the rerouted wiring is covered with a solder resist layer (Reference number 5), but fails to explicitly teach that the solder resist layer is made of a resist material having a Young's modulus of less than 1 GPa measured at a room temperature (20 to 30 °C) and a Young's modulus of 10 MPa or less measured at 150°C. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the solder resist layer of a low elasticity material in order to protect the rest of the layers of the device. In addition it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. See *In re Leshin*, 125 USPQ 416. In regard to the exact values of the Young's Modulus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to make the solder resist layer of a material having a Young's modulus of less than 1 GPa measured at a room temperature (20 to 30 °C) and a Young's modulus of 10 MPa or less measured at 150 °C, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In *re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding Claim 19, Imasu fails to explicitly teach that the rerouted wiring is formed in a nonlinear pattern, at least, between the electronic-part mounting pad and the external connection terminal. It would have involved a mere change in the shape of the component which would be generally recognized as being within the level of ordinary skill in the art. See *In re Dailey*, 149 USPQ 402 (CCPA 1976).

Art Unit: 2827

Conclusion


7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references show some of the elements of the instant claimed invention: Hashimoto, Horiushi et al. and Shimada et al.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose H Alcala whose telephone number is (703) 305-9844. The examiner can normally be reached on Monday to Friday.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Talbott can be reached on (703) 305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JHA
March 25, 2002


Klunes
Primary Examiner